REMARKS

In the October 6, 2003 Advisory Action, the Examiner maintained the rejection of claims 1, 7 to 17, 20, 25, 27, and 31 to 41 under 35 U.S.C. § 103(a). The Examiner argued that "it would have been prima facie obvious at the time of applicants' invention to modify the pathogenic bacteria comprising a mutation in the *surA* gene as taught in Lazar et al., to further include mutations in one or more outer membrane regulation genes as taught by Dougan et al. . . . ."

Applicants respectfully traverse and request withdrawal of this rejection. A skilled person would have had no motivation whatsoever to modify the bacteria comprising a mutation in the *surA* gene, as described in Lazar et al., in the manner suggested by the Examiner. Lazar et al. has nothing whatsoever to do with attenuating pathogenic bacteria in order to produce compositions which invoke an immune response against the bacteria, but rather describes experiments to investigate the biochemical function that *surA* plays in the cell. Indeed, the bacteria used according to Lazar et al. are apparently non-pathogenic, laboratory strains of *E. coli*. There would be no motivation to add attenuating mutations such as those disclosed in Dougan et al. to the *E. coli* described in Lazar et al. because the *E. coli* in Lazar et al. are already fully attenuated (i.e., non-pathogenic). There would be no point in introducing attenuating mutations into a bacterial cell that is already non-pathogenic.

Even if a skilled person did add an attenuating mutation as disclosed in Dougan et al. to the bacteria described in Lazar et al., this would not produce a bacterial cell within the scope of the claims. The claims require that the pathogenic bacterium is attenuated by the non-reverting mutation in the *surA* gene. They do not cover introducing a *surA* mutation into a non-pathogenic bacterium such as that described in Lazar et al. because such a bacterium is already attenuated and cannot be attenuated by a mutation in the *surA* gene. Thus, even if it was obvious for a skilled person to add a mutation as taught in Dougan et al. to

the bacteria taught in Lazar et al. (and this is denied), the resulting bacteria would not fall within the scope of the bacteria recited in the claims.

The Examiner states that the specification does not provide support for a pathogenic bacterium attenuated by a defined mutation in the *surA* gene. The Examiner states that the *surA* mutation has not been defined because the specification defines mutations in general.

Applicants respectfully traverse and request withdrawal of this rejection. The specification contains a detailed description of the various mutations that may be introduced into the *surA* gene in order to produce an attenuated bacterium having a defined mutation as recited in the claims. See page 6, line 10, to page 7, line 23. The specification explains that a defined mutation is a mutation that is characterized and that uncharacterized mutations are undesirable because there would be a risk that the uncharacterized mutations may confer properties on the bacterium that cause undesirable side effects. Page 6, line 30, to page 7, line 3. In addition, a specific example of a defined mutation is given at page 17, line 25, to page 19, line 9, of the specification. Accordingly, the specification provides support for a composition comprising a pathogenic bacterium attenuated by a defined mutation in the *surA* gene.

It is respectfully submitted that the application is in condition for allowance, and a notice to that effect is requested.

If any additional fees are due in connection with the filing of this paper, please charge the fees to our Deposit Account No. 16-2312. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our deposit account.

Respectfully submitted,

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By

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